



The Shield for Next-Gen Mobility.

S2X Network V2X Security





End-to-end mobility ecosystem

Quantum-ready and Future-proof, SAESOL Tech's next-generation solutions proactively safeguard your data integrity against the emerging threats of the quantum computing era.

01

Authentication & Trust Framework

S2X CORE



IEEE1609.2 compatible, security service for signing and verification V2X messages and certificate management.

**Autotalks solution based*

S2X CMS



PKI Server for authenticating and authorizing V2X entities and messages.

S2X Mobile



Network V2X Security for extended entities (e-bike, e-scooter).

02

Secure Data & Communication

S2X Secure Link



V2X Link Encryption Solution for enhanced authentication and authorization.

05

Extended Services



S2X V2G

EV Charging Security Platform

03

Validation & Simulation

S2X Tester



V2X Security Conformance Test System (Qualified by OmniAir).

S2X Probe



V2X Fuzzing Test System.

S2X VINSIM



V2X Simulator (Misbehaving vehicle simulation supported).

04

Infrastructure Data Trust



S2X RoadSigner

Network V2X TMC Solution





The Evolution toward Network V2X and the Expanded Trust Framework

V2X communication has evolved from a direct peer-to-peer messaging system to an IP-based communication model operating through the cloud or relay servers. We call this evolution Network V2X.

In this expanded data network environment, the critical challenge is how to guarantee data reliability and ensure secure transmission. The traditional V2X authentication system ensures the credibility of the message originator through rigorous standards. It is designed to maintain continuous trust not only through strict hardware and software requirements for secure key storage during message signing, but also through continuous behavioral monitoring. Consequently, anyone within this trust framework can verify and trust messages sent by an unspecified majority.

As V2X participants—traditionally defined as OBUs (On-Board Units) and RSUs (Roadside Units)—have expanded to include Traffic Management Centers (TMCs), Service Providers, and Automotive OEMs, there is a growing need to extend the V2X trust framework to these new entities.

To address this, **SAESOL Tech introduces the following suite of solutions:**



S2X RoadSigner

A signature solution for traffic and environmental data generated by TMCs.



S2X Secure Link

A mutual authentication and end-to-end encryption solution utilizing existing ITS certificates between authenticated devices.



S2X Mobile

A V2X message signature and verification solution designed for extended entities.



S2X CMS

A comprehensive certificate issuance and management system that underpins the entire ecosystem.

S2X RoadSigner

Product Overview

This solution ensures message-level reliability when transmitting diverse traffic and road environment data generated by TMCs. Whether the data is sent directly to vehicles via RSUs or distributed to various services—such as OEM platforms or navigation systems—over an IP network, S2X RoadSigner guarantees absolute trust.



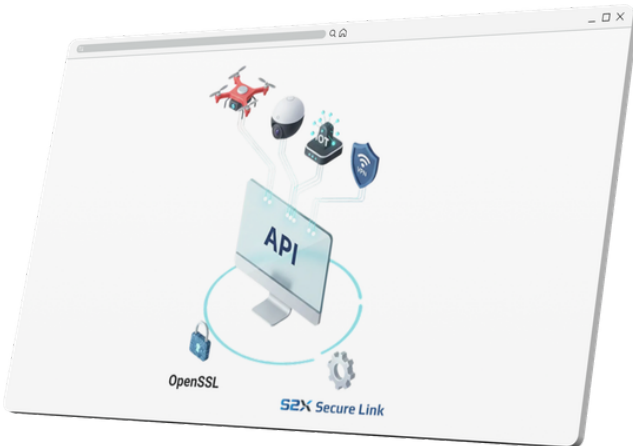
Key Features

- **Digital Signature for SAE J2735 Messages:**
Fully compliant with the IEEE 1609.2 standard.
- **Advanced Virtual RSU Support:**
Enables signing on behalf of the TMC or using the unique cryptographic keys of individual Virtual RSUs.
- **High-Performance Message Processing:**
Capable of high-speed processing, signing over 1,800 messages per second.
- **Flexible Scalability (Scale-out):**
Built on a scale-out architecture to seamlessly expand infrastructure based on system load.
- **Platform Agnostic Deployment:**
Provides customized deployment options in either virtualized (Docker container) or on-premise forms, completely free from the customer's infrastructure constraints.

S2X Secure Link

Product Overview

Designed for environments that require highly secure communication between ITS Stations, advanced authentication, and message-level signature verification.



Key Features



TLS support specifically designed for devices already utilizing ITS certificates.



TLS encryption between RSUs and TMC servers (capable of replacing traditional VPN solutions).



Mutual Authentication (secure two-way authentication between end-devices and servers).



Support for Enhanced Authentication and Extended Authentication protocols.

S2X Mobile

Product Overview

A software module enabling IP network-based devices used by diverse traffic participants—especially mobile phones—to seamlessly integrate into the Network V2X security authentication framework.



Key Features



Message signing and verification for devices used by Vulnerable Road Users (VRUs), including personal mobility vehicles (e-bikes, e-scooters), motorcycles, and pedestrians.



Multi-platform support: iOS, Android, and Linux.



High-speed digital signature verification: Capable of processing over 300 verifications per second.

S2X CMS

Product Overview

Issues trusted certificates to all traffic participants, from vehicles and infrastructure to VRUs. This robust system establishes the foundational layer for a highly reliable V2X network.



Key Features



Issuance of IEEE 1609.2 - 2022 standard-compliant certificates (Enrollment and Authorization certificates).



Support for diverse device credential verifications, including Canonical ID and ISO 21177.

Global Certification & Registration Achievements

- Listed in the Production CTL of the North American SCMS Manager
- Registered at European ECTL Level 0 and partially compliant with ECTL Level 1



A Global Player for Mobility Innovation



CONTACT

sales@saesol.tech

1201 North Market Street, Suite 111-L29, Wilmington, DE 19801

100 Middlefield Rd. Menlo Park, CA 94025, USA

